

Characterisation of a Novel Polymer Electrolyte Based on a Plastizing Lithium Salt

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The results of a preliminary investigation of a series of polymer electrolytes based on a novel host polymer with the "plasticising" salt, lithium trifluoromethanesulfonyl imide (LiTFSI). and conducting enhancing additives. are described in this presentation. Electrolytes with a range of lithium salt compositions between n=3 and 85 (where n represents the molar ratio of polymer units per lithium ion) and additive compositions between 5 and 15 wtanhydrous solvent with the required amount of additive. The solvent-free electrolyte films were characterized by measurement of ionic conductivity, dsc and tga. The LiTFSI-based electrolytes showed good ionic conductivity and acceptable thermal stability. Electrolytes based on this host polymer were obtained as very transparent, completely amorphous films with excellent mechanical properties.